CHAPTER 4

CONNECTIVITY IMPROVEMENTS

The Anacostia Access Study identified a set of transportation connectivity improvements that would achieve the long-term objectives of the Anacostia Waterfront Initiative and other public and private plans for the area, as well as support the South Capitol Gateway initiative itself. The improvements are designed not only to enhance transportation conditions but also to:

- create benefits for the surrounding neighborhoods,
- complement and expand the area's parks and public open space,
- encourage appropriate new development, and
- provide a striking approach to the United States Capitol and Washington's Monumental Core.

Some of these projects are related to one-another, and therefore, where appropriate, the report identifies which projects are best developed with others, or in some cases which projects should not be developed with others. While further study is needed to refine these relationships, decisions can be made during the course of the development of the Implementation Strategy about which "packages" are most feasible.

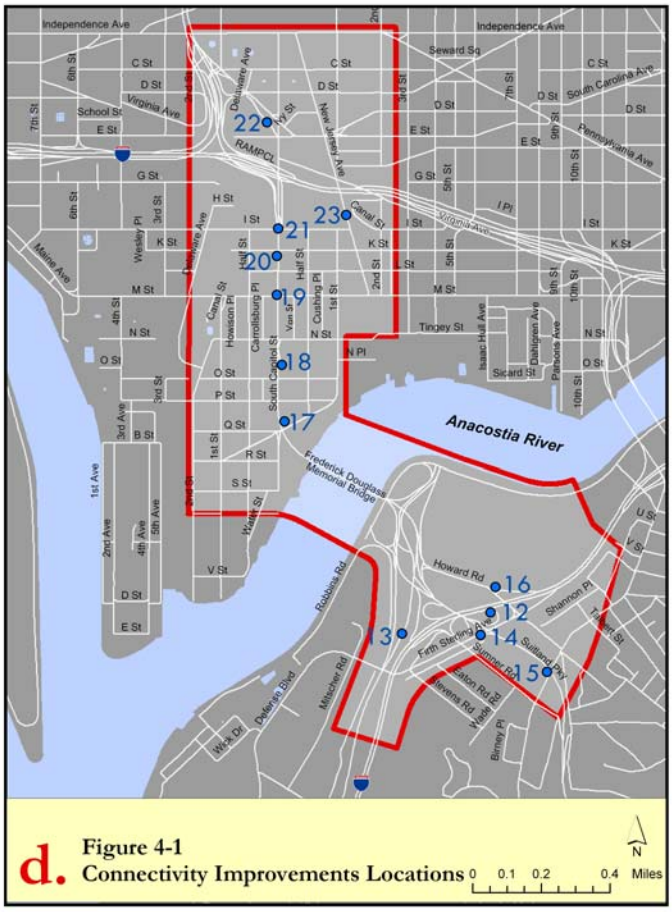
GOALS AND OBJECTIVES

The overarching goal for the Connectivity Improvements derives from the Anacostia Waterfront Initiative Framework Plan, which lays out five critical themes that must be addressed to achieve the AWI vision. One theme is Eliminating Barriers and Gaining Access: "The AWI reconsiders the design of transportation infrastructure in order to gain access to waterfront lands and better serve waterfront neighborhoods. The community must be able to get to the waterfront on beautiful streets and bridges that become gateways to the river's parks and amenities." Building a boulevard on South Capitol Street will remove the freeway barriers that now block access to the river and create new opportunities for more-direct links to the neighborhoods. Because of its geographic place on the Anacostia, South Capitol Street may be the single most important street where this AWI theme must be realized.

The specific core goals and objectives of the Connectivity Improvements do not differ substantially from those of the Near-Term Improvements. That is, the Connectivity Improvements should focus on projects that will:

- Improve safety for motorists, pedestrians, bicyclists and other roadway users.
- Improve accessibility and connectivity for pedestrians and bicyclists.
- Improve transportation system efficiency.
- Create more visually appealing streets and public places.

Projects considered in this category are generally more complex and robust, as well as more expensive, then those in the category of Near-Term Transportation Improvements, and will likely require some sort of NEPA process, as well as comprehensive public participation activities. As major construction projects they will have a greater impact on the flow of ongoing traffic during construction, as well as associated noise, dust, and environmental mitigation requirements. However, in general their payoff is greater, and if well-selected and well-timed, will have a beneficial long-term impact on traffic, economic development, and the quality of life in the corridor.



d. Figure 4-1
Connectivity Improvements Locations

PRIMARY FINDINGS

There are several project packages that will contribute to meeting the vision. Clearly DDOT has multiple means available to deliver project packages that will contribute to meeting the AWI vision and the Goals and Objectives of the plans. These options can be evaluated during the NEPA process and the best options selected.

The Poplar Point choices will set a standard. While it is clear that Connectivity Improvements north of the river crossing will convert South Capitol Street from a freeway to an urban boulevard, there are still decisions to be made about the general nature of the improvements east of the river, particularly involving the interaction between South Capitol Street, Suitland Parkway, and I-295. Given the critical nature of improving the interchange between Suitland Parkway and I-295, the character chosen for the improvements, as well as its engineering and traffic considerations, will set an aesthetic standard that will "introduce" the corridor to travelers entering the city via South Capitol Street. Selection of the urban diamond option would instantly introduce a very strong Urban Boulevard theme, while improvements to the existing interchange would tend to reinforce the freeway feel to the area.

PRIMARY RECOMMENDATIONS

Use the NEPA process to select final options. Within the array of potential projects are several critical ones that present multiple options at this stage, and these must be considered, refined, and selections made. The NEPA process, emphasizing a broad range of selection considerations, is the proper venue within which to make the final choices.

Package carefully for efficient implementation. Through the NEPA process DDOT will be able to finalize project selection criteria, and package the improvements for efficiency and economy as well as to maximize public support and economic development.

Investigate alternative delivery methods. There are several means to deliver specific projects faster and more efficiently, and potentially at lower cost. Design-Build and Fast-Tracked Design-Bid-Build are options that have been successfully implemented for similar projects and programs around the nation, including bridge, interchange, and highway programs, and each offers its own advantages and disadvantages. As the NEPA process and subsequent engineering analyses proceed, DDOT will investigate alternative delivery methods for specific projects to determine their applicability to the South Capitol Gateway Corridor program.

PROJECT SUMMARIES

The Anacostia Access Study identified 12 potential Connectivity Improvements that would meet these goals. These improvements reflect the vision developed in The South Capitol Gateway and Corridor Improvement Study, and are developed in more detail based upon transportation planning, urban design, environmental management, civil engineering, structural engineering, and traffic engineering principles.

Potential Project Summaries for these 12 projects, numbered 12 – 23, are on the following pages. More detailed information for these projects is included in Appendix A4. Order of magnitude cost estimates were prepared for the proposed Connectivity Improvements, based on construction bid tabulations and other estimating tools. These do not include such items as survey, engineering, maintenance of traffic and mobilization. Costs can vary depending on the prioritization, grouping, and implementation of the improvements. Additional information on overall cost estimates is included in Appendix A-6.

This chapter describes options for the portion of the study area around Poplar Point and Suitland Parkway first and then describes options for the urban boulevard in the portion of the study area between the Anacostia River and the Capitol Building.

The improvements were defined for individual locations throughout the study area, typically specific intersections and interchanges, to ensure the potential improvements would be sensitively designed for the conditions at each location. More than one type of potential improvement that would accomplish the study goals would be possible in some locations. These improvements are defined in this report as options. In some places, the needed improvement is so clear that only one potential improvement was developed. In other locations, multiple options can be considered.

The different options in different locations could be combined to create a variety of overall corridor solutions. There are some limitations in these possible combinations, and those limitations are noted.

All the options are based on the assumption that a new Frederick Douglass Memorial Bridge will be built to replace the existing bridge. Because a new bridge is so important, it will be the subject of additional design development and review. The considerations that affect the bridge design along with concepts for its design are described in Chapter 5.

Where there are options, the study analyzed characteristics that allow their comparison. However, selecting one option will require a thorough analysis of their impacts in a formal environmental analysis that complies with the National Environmental Policy Act. The environmental analysis will be a subsequent planning step.

The characteristics analyzed to allow comparison include traffic performance. A forecast of traffic volumes in 2030, the current planning year for transportation planning in the Washington metropolitan area, was used for this analysis. The traffic analysis methods and results are described in detail in Appendix A-1.

The characteristics analyzed also include the cost of each option. The purpose of the estimates shown in this chapter is only to allow comparisons among options at each location, not to represent total project costs. Because total project costs are important, a second cost analysis produced total cost estimates for improvements throughout the study area. These corridor cost estimates are in Chapter 6.

PEDESTRIAN AND BICYCLE CIRCULATION

All the options include improved pedestrian and bicycle facilities. Wide sidewalks along South Capitol Street will provide pedestrian connections through the corridor as well as access to neighborhoods and adjacent development. Crosswalks on new and modified intersections will allow people to cross streets that are now blocked. Intersections will be signal-controlled and provide for pedestrian crossings where Jersey barriers now prevent access. Links to the Anacostia Riverwalk Trail and to other walkways will create a pedestrian network throughout the corridor.

DDOT is now updating the District of Columbia Bicycle Master Plan. The options for the South Capitol Street corridor are all compatible with the plan's proposed bicycle facilities.

Most important, the quality of pedestrian and bicycle facilities will be greatly improved, making walking and cycling safer, more attractive, and more enjoyable. Appendix A-4 illustrates the provisions for pedestrian and bicycle circulation.

TRANSIT

Transit is an important component of the transportation improvements for the South Capitol Street corridor. All the options include provisions for enhanced transit services and facilities. This must include a transit center to provide intermodal connections and to serve as a transportation hub for development in the area.

Some transit improvements are already planned, such as building the Anacostia Corridor Demonstration Project light rail line and expanding the Metrorail Green Line service by operating longer, eight-car trains. The District of Columbia Alternatives Analysis is considering more improvements—light rail, trolley, and bus rapid transit lines—in several corridors, including M Street SE and SW. A new transit lines could use the South Capitol Street corridor to cross the Anacostia River using the potential transit alignment shown in Appendix A-4A.

WMATA's Southeast Bus Garage, located at Half and M Streets, SE, must be relocated. This creates the opportunity to convert that location to a transit center that would connect the Metrorail Green Line, the light rail line planned for M Street, and regional transit along South Capitol Street. A transit center at that location would improve travel to and through the corridor, as well as serving as a draw for tourism and entertainment.

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **12**
PROJECT NAME: Interchange Enhancements
PROJECT LOCATION: Suitland Parkway and I-295
WARD: 8

PROJECT DESCRIPTION: The interchange between Suitland Parkway and I-295 is the key transportation system component in this part of the study area. Modifying the interchange is crucial to solving many problems, and the character of the modifications will help define the appropriate improvements at the other nearby locations. Because it is key, the study addressed this interchange first. The chief existing problem at the site is that not all traffic movements can be made via ramps, and therefore motorists instead make indirect connections using local roads, greatly impacting efficiency and safety at the interchange. Additionally, the high-speed nature of both roadways prohibits bicycle and pedestrian facilities.

Three options for improving the interchange are most feasible:
Option 1, Existing Interchange with Added Ramp
Option 2, Interchange with Flyover
Option 3, Urban Diamond.

One additional option, lowering I-295 beneath the Suitland Parkway, was considered unfeasible. The three feasible options are summarized on the following pages.

There is minimal development near the interchange. A commercial building owned by Verizon is at the southwestern corner of the interchange, between Firth Sterling Avenue and Barry Road; a charter school and commercial office building are at the northeastern corner. The Anacostia Metrorail station local entrance is nearby on Howard Road between Firth Sterling Avenue and Martin Luther King, Jr. Avenue.

Comparison of Options at Suitland Parkway and I-295
Table 4-1 is summary of the traffic operations analysis results for the I-295 interchange. Queuing on Firth Sterling Avenue would be longer in Option 1 than the other options. Options 1 and 3 would result in longer queues on northbound Suitland Parkway than Option 2, interchange with flyover; however, the flyover option would have a longer southbound queue than the other options. Table 4-2 summarizes the impacts and comparative costs of the three interchange options.

Table 4-1 Suitland Parkway and I-295 Traffic Analysis Results

	Queuing Results
Option 1, Existing Interchange with Added Ramp	
AM	Queuing on NB off-ramp to Sumner Rd extends back onto I-295. Queuing on SB Suitland on-ramp to SB I-295 extends back into traffic circle. Minimal queuing on SB I295-SB Suitland loop ramp.
PM	Queuing on NB off-ramp to Sumner Rd extends back onto I-295. Queuing on SB I-295-SB Suitland loop ramp spills back onto SB I-295.
Option 2, Interchange with Flyover	
AM	Queuing from NB I-295 off-ramp to SB Suitland extends back onto I-295.
PM	Queuing from NB I-295 off-ramp to SB Suitland extends back onto I-295.

	LOS/Delay
Option 3, Urban Diamond Interchange (intersection with SB I295 off-ramp)	
AM	LOS B / 16.7
PM	LOS F / 85.0
Option 3, Urban Diamond Interchange (intersection with NB I295 off-ramp)	
AM	LOS C / 34.2
PM	LOS F / 129.8

Table 4-2 Comparison of Options at Suitland Parkway and I-295

Suitland Parkway and I-295	Impact										
	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic Separation	Parkland Access	Pedestrian- and Bike-Friendly Facilities	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
Option 1, Existing Interchange with Added Ramp											
New ramp from SB I-295 to NB Suitland Parkway	+	o	+	o	+	o	o	o	–	o	$34.9
Option 2, Interchange with Flyover											
New ramp from SB I-295 to NB Suitland Parkway	+	o	+	o	+	o	o	o	–	o	$81.0
Replace existing SB Suitland Parkway to NB I-295 ramp with flyover ramp	o	+	+	o	o	o	o	–	+	–	
Replace existing ramp from NB I-295 to Sumner Rd with ramp from NB I-295 to SB Suitland Parkway	+	o	+	o	+	o	o	o	o	o	
Remove ramp from NB I-295 to NB Suitland Parkway	–	o	–	o	–	o	o	+	+	–	
Option 3, Urban Diamond Interchange											
Replace existing interchange with urban diamond with four new ramps and two traffic signals	+	o	–	o	+	o	o	+	+	o	$49.0
Remove Firth Sterling Ave ramp to NB I-295	–	o	–	o	o	o	+	+	+	o	

Legend: + improves – makes worse o no change

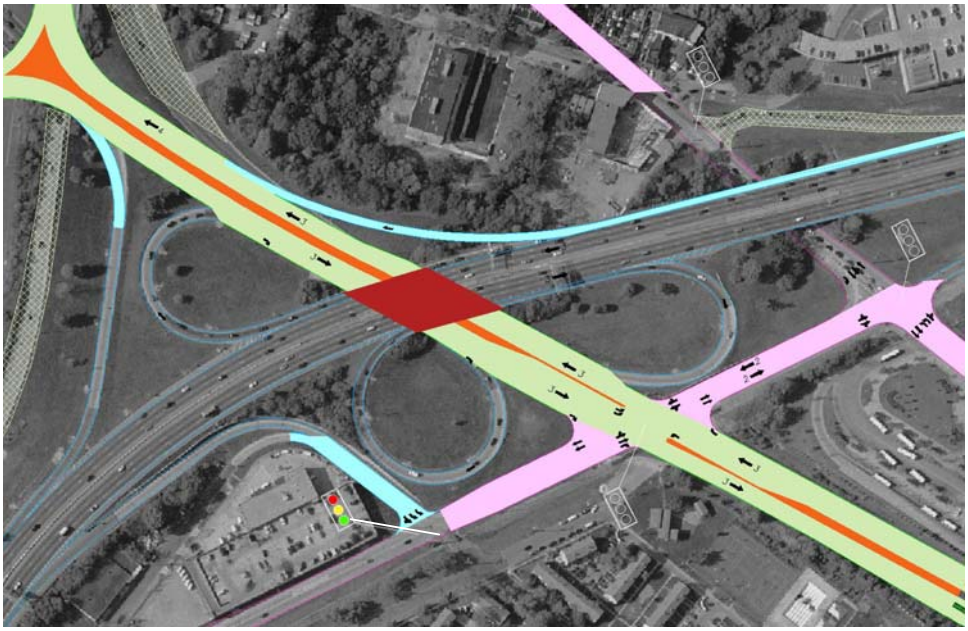
ESTIMATED COST: $34.9 – 81 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland/South Capitol Street, Suitland/Firth Sterling, Howard Road Parking Garage, Local Street Improvements

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **12-1**
PROJECT NAME: Option 1, Existing Interchange with Added Ramp
PROJECT LOCATION: I-295 and Suitland Parkway
WARD: 8

PROJECT DESCRIPTION: The simplest modification to improve the interchange would be to add a new ramp to carry traffic from southbound I-295 to northbound Suitland Parkway. This traffic must now use Howard Road to travel through the interchange. The rest of the existing interchange would remain and a single-lane ramp would be constructed. As part of this option, the existing ramp from southbound I-295 to Howard Road could be removed, as the distance between it and the new ramp would not meet AASHTO standards. A new traffic signal would be added at the intersection of Firth Sterling Avenue and Sumner Road.

This option would remove through traffic from Howard Road, making it once again a local street rather than part of the freeway interchange. The reduction in traffic volumes would change Howard Road's character and allow redevelopment to occur.



Option 1, existing interchange with added ramp

The removal of the southbound-I-295-to-Howard Road ramp would remove regional access to the Anacostia Metrorail station parking garage. This disadvantage applies to each of the three options investigated, and potential corrections to this condition are identified in Project 16.

ESTIMATED COST: $34.9 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland/South Capitol Street, Suitland/Firth Sterling, Howard Road Parking Garage, Local Street Improvements

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **12-2**
PROJECT NAME: Option 2, Interchange with Flyover
PROJECT LOCATION: I-295 and Suitland Parkway
WARD: 8

PROJECT DESCRIPTION: This includes the reconstruction of the existing interchange to add a flyover as well as the ramp that would be part of Option 1. This would allow a direct connection from southbound South Capitol Street to northbound I-295. This segment of Suitland Parkway would be widened to three lanes in each direction.

Option 2, interchange with flyover

The existing southbound-Suitland Parkway-to-northbound-I-295 ramp would be replaced with a flyover ramp. Because the existing loop ramp from northbound I-295 to northbound Suitland Parkway begins south of this point, this existing ramp would need to be removed. Finally, the existing southbound-Suitland Parkway-to-southbound-I-295 ramp would be reconstructed to tie into the flyover ramp. The loop ramp from southbound Suitland Parkway to northbound I-295 would be removed, freeing the majority of this space for non-roadway uses and possible development. Access through this area for cyclists and pedestrians would continue to be provided on the Howard Road route described in Chapter 3, which would be safer and more comfortable than cycling or walking through the interchange.

The addition of the flyover ramp also would require the removal of the northbound-I-295-to-northbound-Suitland Parkway ramp, directing through traffic onto local streets Firth Sterling Avenue and Howard Road to make this connection. This additional traffic would reduce the benefit of removing the southbound I-295-to-northbound-Suitland Parkway traffic from Howard Road. The widening of Suitland Parkway to three lanes in each direction would require reconstruction of the I-295 bridge over Suitland Parkway. As in Option 1, the

removal of the southbound-I-295-to-Howard Road ramp would remove regional access to the Anacostia Metrorail station parking garage. This connection could be accomplished through Project Number 16 described later in this chapter.

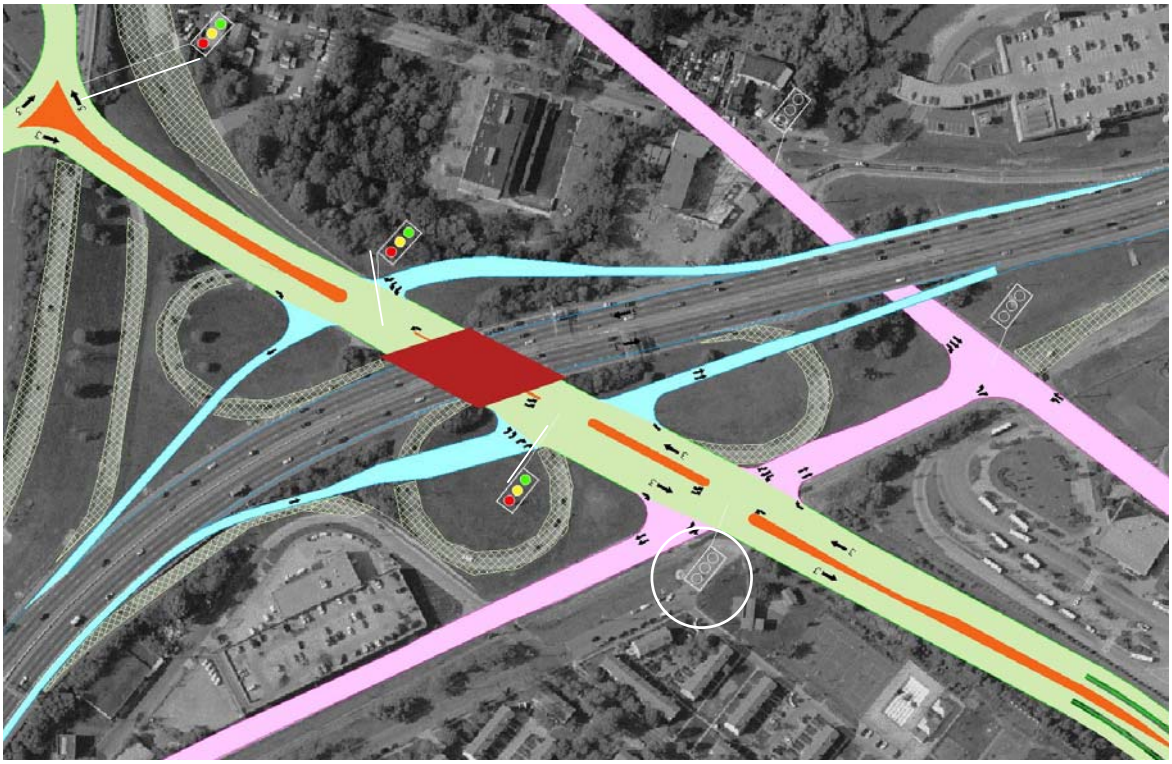
ESTIMATED COST: $81 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland/South Capitol Street, Suitland/Firth Sterling, Howard Road Parking Garage, Local Street Improvements

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **12-3**
PROJECT NAME: Option 3, Urban Diamond
PROJECT LOCATION: I-295 and Suitland Parkway
WARD: 8

PROJECT DESCRIPTION: This option involves the replacement of the existing interchange with an urban diamond interchange. All the loop ramps in the existing interchange would be removed to allow for the construction of the new ramps. Suitland Parkway would be widened to three lanes in each direction, and left-turn lanes would be added to Suitland Parkway at the ramps to I-295. Because of this widening, the bridge that carries I-295 over Suitland Parkway would be replaced by a longer structure.

Two traffic signals would be added to Suitland Parkway at the ramp entrances and exits to I-295. This segment of Suitland Parkway would be widened to three lanes in each direction with a median wide enough to allow for left-turn lanes.



Option 3, Urban Diamond

This is the only option that would provide for all traffic movements at the interchange. In other words, a motorist traveling from one direction could use the interchange to travel in any other direction. Though this

interchange would be more urban in character than the other two options, pedestrians and bicyclists would still be encouraged to travel along Firth Sterling Avenue and Howard Road due to the large number of vehicles traveling on Suitland Parkway and to and from the diamond interchange ramps.

ESTIMATED COST: $49 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland/South Capitol Street, Suitland/Firth Sterling, Howard Road Parking Garage, Local Street Improvements

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **13**
PROJECT NAME: Interchange Redevelopment
PROJECT LOCATION: South Capitol Street and Suitland Parkway
WARD: 8

PROJECT DESCRIPTION: The junction of South Capitol Street and Suitland Parkway is located north of the Suitland Parkway and I-295 interchange and southeast of the Frederick Douglass Memorial Bridge. The existing connection between South Capitol Street and Suitland Parkway is not an intersection but a series of ramps. Only two movements are possible between the two roadways: northbound Suitland Parkway to northbound South Capitol Street and southbound South Capitol Street to southbound Suitland Parkway.

Two improvement options have been considered for this interchange: Option 1, At-Grade Intersection; Option 2, Traffic Circle

This segment of South Capitol Street is a 35 miles-per-hour freeway with three lanes northbound and two lanes southbound, carrying an ADT volume of 59,000 in 2001. This traffic volume is primarily commuter traffic between the District and Maryland, but it serves as an important local connection.

Traffic through this area is directional, with the northbound direction backing up in the morning and southbound direction backing up in the afternoon. During the a.m. peak, or rush, hour, the ramp from northbound Suitland Parkway to northbound South Capitol Street, which is controlled by a traffic signal, operates with high values of delay, poor traffic progression, and frequent cycle failures. During the p.m. peak hour, this intersection operates with short delays and good traffic progression. This location has been the site of a relatively low number of reported accidents in recent years.

The pedestrian and bicycle route that runs across the Frederick Douglass Memorial Bridge continues onto a narrow bicycle route along southbound South Capitol Street. A bicycle route also runs between the bridge and Poplar Point, but it requires the crossing of three ramps.

The National Park Service owns the land east of the South Capitol Street and Suitland Parkway junction; the United States Navy owns the land to the southwest. The existing junction of South Capitol Street and Suitland Parkway is a barrier for motorists, pedestrians, and bicyclists wishing to travel among the various land uses. The freeway ramps that connect the two roadways encourage high speeds and discourage access to the waterfront and parkland.

Comparison of Options at South Capitol Street and Suitland Parkway
Table 4-3 is a summary of the traffic operations analysis results for the options at South Capitol Street and Suitland Parkway. The LOS analysis shows that the at-grade intersection option would operate at a better level of service than the traffic circle option. Although a traffic circle would operate well, the approaches to the circle

would operate at level of service F, which means that vehicles would be delayed by more than 80 seconds. Table 4-4 summarizes the impacts and comparative costs of the two options. The costs listed do not include demolition or construction costs for a new bridge over the Anacostia River.

Table 4-3 South Capitol Street and Suitland Parkway Traffic Analysis Results

	LOS/Delay (seconds)
Option 1, At-grade Intersection	
AM	LOS D/36.2
PM	LOS C/34.8
Option 2, Traffic Circle	
AM	LOS F/105.7
PM	LOS F/189.0

Table 4-4. Comparison of Options at South Capitol Street and Suitland Parkway

South Capitol Street and Suitland Parkway	**Impact**										
	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic Separation	Parkland Access	Pedestrian- and Bike-Friendly Facilities	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
Option 1, At-grade intersection with realigned South Capitol Street, Suitland Parkway, and Anacostia Drive	+	+	+	+	o	+	+	+	+	–	$15.8
Option 2, Traffic circle with realigned South Capitol Street, Suitland Parkway, and Anacostia Drive	+	+	+	+	o	+	+	+	+	–	$20.9

Legend: + improves – makes worse o no change

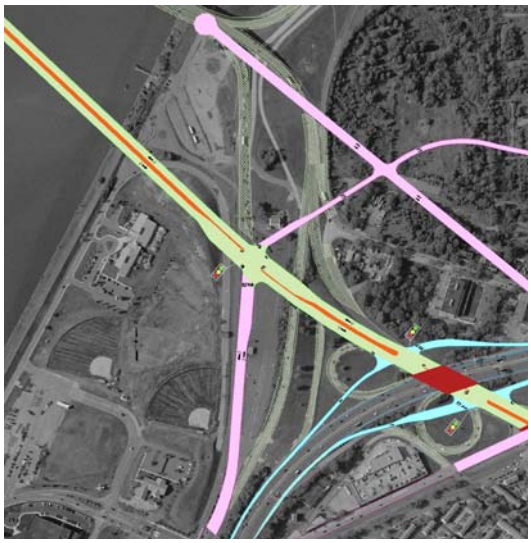
ESTIMATED COST: $15.8 – 20.9 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Frederick Douglas Memorial Bridge, Howard Road Parking Garage, Suitland Parkway and I-295

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **13-1**
PROJECT NAME: Option 1, At-Grade Intersection
PROJECT LOCATION: South Capitol Street and Suitland Parkway
WARD: 8

PROJECT DESCRIPTION: This option is based upon an alignment for a new Frederick Douglass Memorial Bridge that is located south of the existing bridge, as defined in The South Capitol Gateway and Corridor Improvement Study. The new alignment would provide for a direct transition to Suitland Parkway and would provide northbound traffic on the bridge with a direct view of the Washington Monument. The new bridge would be approximately 20 feet lower than the existing bridge, allowing for a signalized at-grade intersection with Suitland Parkway that would include all traffic movements.

The existing ramps between Suitland Parkway and South Capitol Street would be removed, along with the existing northbound South Capitol Street segment between Firth Sterling Avenue and the bridge. Along the new bridge, South Capitol Street would include three lanes in each direction, sidewalks, and a median. South Capitol Street south of the new intersection would have two lanes in each direction. The northeastern leg of the intersection would be a two-lane street that would connect to the realigned Howard Road and Anacostia Drive as defined in the AWI Poplar Point Plan.



Option 1, at-grade intersection

The new intersection would allow for all traffic movements and increased connectivity. The South Capitol Street and Suitland Parkway approaches would have exclusive left-turn lanes, and the southbound South Capitol Street, Suitland Parkway, and Anacostia Drive approaches would have exclusive right-turn lanes. Because this intersection would be signalized, crosswalks and protected pedestrian phases would be present at all approaches.

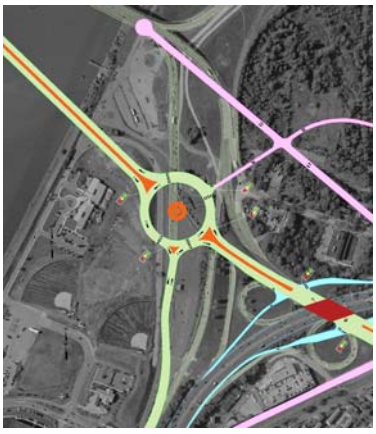
The intersection would be located on property currently owned by the United States Navy, and could be the site of hazardous materials in the soil, which may require environmental remediation. An at-grade intersection at this location would create a more urban character than the existing freeway ramps. Traffic speeds would be lower, and pedestrians and cyclists would be better accommodated. The intersection could create opportunities for development or public open space at the northeast, northwest, and southeastern corners. This intersection would provide direct access to Anacostia Park to the east and the Anacostia waterfront to the north.
ESTIMATED COST: $15.8 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Frederick Douglas Memorial Bridge, Howard Road Parking Garage, Suitland Parkway and I-295

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **13-2**
PROJECT NAME: Option 2, Traffic Circle
PROJECT LOCATION: South Capitol Street and Suitland Parkway
WARD: 8

PROJECT DESCRIPTION: This option would create a traffic circle intersection of South Capitol Street and Suitland Parkway. It is based on the same assumption as Option 1 that a new Frederick Douglass Memorial Bridge would be built on a new alignment and the ramps between Suitland Parkway and South Capitol Street would be removed. The same Poplar Point roadway connections would be made as in Option 1.

The traffic circle would have an outside diameter of 480 feet, similar in size to Dupont Circle. The circle would have three lanes and traffic signals at each approach leg.



Option 2, traffic circle

The traffic circle would allow for all traffic movements and increased connectivity. A traffic circle carrying large traffic volumes like those of South Capitol Street and Suitland Parkway requires traffic signals to control the traffic flow. Traffic signals would also be required to provide safe pedestrian and bicycle circulation. Protected pedestrian phases and crosswalks would allow for safe movement around or through the circle.

A traffic circle would allow for possible activities or a landmark in the center and could be the site for a monument or memorial. However, a traffic circle of this size would require pedestrians to travel further than they would through a traditional intersection, having to wait to cross each leg. Like Option 1, the traffic circle would occupy United States Navy land.

This option could not be combined with Suitland Parkway and I-295 Option 2, the interchange with flyover, because the flyover ramp's starting point would interfere with the traffic circle location.

ESTIMATED COST: $20.9 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Frederick Douglas Memorial Bridge, Howard Road Parking Garage, Suitland Parkway and I-295

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **14**
PROJECT NAME: Intersection Redevelopment
PROJECT LOCATION: Suitland Parkway and Firth Sterling Avenue
WARD: 8

PROJECT DESCRIPTION: The intersection of Suitland Parkway and Firth Sterling Avenue is located immediately south of the Suitland Parkway and I-295 interchange. Because of the angle at which the two streets intersect, concrete islands channelize three of the four approaches' right-turn lanes.

The land uses around the intersection vary: at the northern corners, loop ramps between I-295 and Suitland Parkway; at the southwestern corner, Barry Farm Recreation Center; and at the southeastern corner, the Anacostia Metrorail station and Metrobus area.

An unused CSX railroad right-of-way runs alongside Firth Sterling Avenue and crosses Suitland Parkway. This right-of-way will be used by WMATA for a light rail demonstration project that will begin operation in 2006.

Firth Sterling Avenue is a major route for motorists and pedestrians traveling between the Anacostia Naval Annex, the Anacostia Metrorail station, and Historic Anacostia. The road is classified as a collector road and carries two lanes of traffic in each direction. Firth Sterling Avenue carried an ADT volume of 11,800 in 2001.

The traffic operations of this intersection are characterized by long queues and delays. During the a.m. peak hour, the intersection operates with high values of delay, poor traffic progression, and frequent cycle failures. During the p.m. peak hour, the intersection operates with unacceptable delays and very poor traffic progression.

This intersection has one of the highest accident and fatality rates in the District; 136 accidents occurred here between 1999 and 2002. Four of these accidents involved fatalities. The most common types of accidents in recent years were rear-end and left turn collisions. One of the likely causes of accidents at this intersection is the limited sight distance and abrupt change in speed from both the northbound and southbound Suitland Parkway approaches. Pedestrian safety and convenience are especially important because residents of Barry Farm must cross the intersection to reach the Anacostia Metrorail station.

This wide intersection carries large volumes of vehicles and pedestrians. Although the setting is urban, it is the only intersection along Suitland Parkway in the project study area. As a result, vehicles move quickly through the intersection, discouraging activity in the surrounding parcels.

Comparison of Options at Suitland Parkway and Firth Sterling Avenue

Table 4-5 is a summary of the traffic operations analysis results for the Suitland Parkway and Firth Sterling Avenue intersection with the three options possible at Suitland Parkway and I-295. The table does not include Option 2 at Firth Sterling Avenue since this option would not include an intersection. Table 4-6 summarizes the impacts and comparative costs associated with Options 1 and 2.

Table 4-5. Suitland Parkway and Firth Sterling Avenue Traffic Analysis Results

	LOS/Delay (seconds)
Signalized Intersection with Suitland-I-295 Option 1, existing interchange with added ramp. Traffic distribution diff from Diamond Interchange with off-ramp at Sumner Rd and on-ramp at Howard Road	
AM	LOS D/47.5
PM	LOS F/119.0
Signalized Intersection with Suitland-I-295 Option 2, interchange with flyover. Traffic distribution different from Di Interchange with on-ramp at Howard Road	
AM	LOS D/40.5
PM	LOS E/72.3
Signalized Intersection with Suitland-I-295 Option 3, urban diamond interchange	
AM	LOS C/24.0
PM	LOS F/118.2

Table 4-6. Comparison of Options at Suitland Parkway and Firth Sterling Avenue

Suitland Parkway and F Sterling Avenue	**Impact**										
	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic	Parkland Access	Pedestrian- and Bike-Friendly	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
Option 1, modified existing intersection	o	o	+	o	o	o	+	+	o	o	19.3
Option 2, grade separation	–	+	+	–	o	o	+	+	o	o	$48.7

Legend: + improves – makes worse o no change

ESTIMATED COST: $19.3 – 48.7 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: I-295 Bridge over the Suitland Parkway, Suitland Parkway and Martin Luther King, Jr. Avenue Intersection.

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **14-1**
PROJECT NAME: Option 1, Improved At-Grade Intersection
PROJECT LOCATION: Suitland Parkway and Firth Sterling Avenue
WARD: 8

PROJECT DESCRIPTION: This option would modify the existing intersection to make it more urban and pedestrian-friendly. The channelizing islands would be removed where they are not needed and the curb radii would be reduced to slow the speed of turning vehicles.

Option 1, improved at-grade intersection

This option would provide the same traffic movements as the existing condition. The pedestrian and bicycle environment would be improved with the narrowed intersection.

In 2030, the eastbound approach of Firth Sterling Avenue is projected to have an ADT volume of 14,570. The westbound approach would have an ADT volume of 5,760. The eastbound volume is much higher than the westbound because it includes vehicles traveling to the northbound I-295 ramp. The traffic volumes traveling to this intersection would vary depending on the option constructed at the Suitland Parkway and I-295 interchange. Thus, the intersection configuration would be different between the three interchange options. Details of each configuration are in Appendix A.

This option would improve pedestrian safety and the design quality of the intersection. Traffic operations would be improved with signal retiming and optimization. Because it is a relatively simple modification, no other benefits would accrue.

ESTIMATED COST: $19.3 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: I-295 Bridge over the Suitland Parkway, Suitland Parkway and Martin Luther King, Jr. Avenue Intersection.

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **14-2**
PROJECT NAME: Option 2, Grade Separation
PROJECT LOCATION: Suitland Parkway and Firth Sterling Avenue
WARD: 8

PROJECT DESCRIPTION: A more substantial modification at this location would grade separate Firth Sterling Avenue and Suitland Parkway, lowering Suitland Parkway approximately 27 feet. Firth Sterling Avenue and the new light rail line would remain at their present grade and pass over Suitland Parkway. There would be no connection between the two roads. The light rail alignment would continue to run along the south side of Firth Sterling Avenue along the present CSX right-of-way. Sidewalks would run along both sides of Firth Sterling Avenue. Access to Historic Anacostia would be replaced by a new interchange at Suitland Parkway and Martin Luther King, Jr. Avenue.

Option 2, grade separation

The intersection of Suitland Parkway and Firth Sterling Avenue now allows all movements, but the grade-separation option would remove all turning movements at this location. While alternative connections can be developed, under any scenario this option would have a significant impact on the distribution of traffic to the nearby streets.

This option would create major benefits for pedestrians. People could walk from Barry Farm to the Anacostia Metrorail station without crossing traffic. This change would enhance connections within the neighborhood and dramatically improve pedestrian safety, improving one of the most dangerous traffic locations in the city. Although lowering Suitland Parkway would remove the barrier that Suitland Parkway's traffic creates, the depressed parkway would create a visual barrier because of the structure of the retaining walls.

This option would require the I-295 bridge over Suitland Parkway to be replaced because the grade of Suitland Parkway would be lower than the present ground at the southern edge of the existing bridge. Though a 96-inch gravity sewer runs below Suitland Parkway, it would not prevent the lowering of Suitland Parkway. However, lowering the grade of Suitland Parkway might create a low area unable to be drained by the gravity sewer. Pumps would be required to remove water from the roadway, adding costs to both the initial construction and continuing operations.

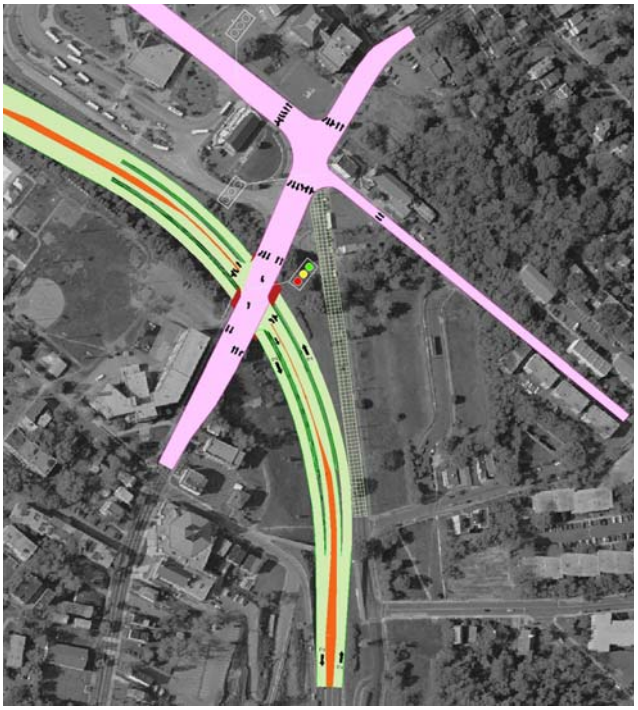
ESTIMATED COST: $48.7 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: I-295 Bridge over the Suitland Parkway, Suitland Parkway and Martin Luther King, Jr. Avenue Intersection.

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **15**
PROJECT NAME: Center Ramp Interchange
PROJECT LOCATION: Suitland Parkway and Martin Luther King, Jr. Avenue
WARD: 8

PROJECT DESCRIPTION: Martin Luther King, Jr. Avenue is the only major north-south local roadway through the Anacostia area. A two-way, four-lane minor arterial, it passes over Suitland Parkway south of the Suitland Parkway and Martin Luther King, Jr. Avenue intersection. The only connections between Martin Luther King, Jr. Avenue and Suitland Parkway are indirect ones on local streets.

The limited connections between these two major routes cause nearby intersections to operate beyond their capacity. Because of the proximity of the overpass and the Martin Luther King, Jr. Avenue and Howard Road intersection, the transportation and land use opportunities at this location are limited.

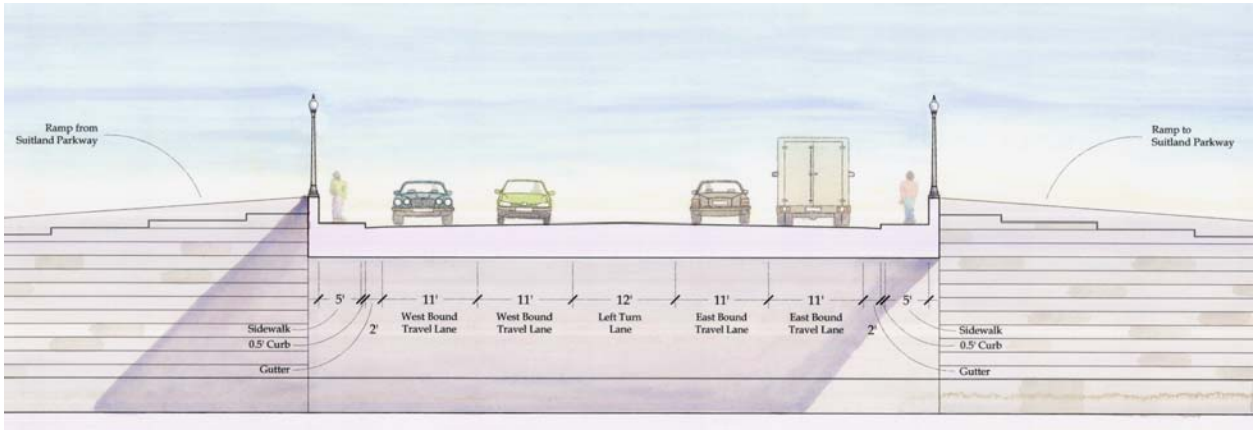


Center-ramp interchange

This improvement would create a center-ramp interchange between Suitland Parkway and Martin Luther King, Jr. Avenue, where single-lane ramps from Suitland Parkway up to Martin Luther King, Jr. Avenue would be located in the center of Suitland Parkway. One ramp would be on each side of the Suitland Parkway median, on either side of Martin Luther King, Jr. Avenue, for a total of four ramps. The Suitland Parkway-to-Martin Luther King, Jr. Avenue ramps would widen to include an exclusive left-turn and a shared thru-right lane at a signalized intersection with Martin Luther King, Jr. Avenue. This interchange would have minimal right-of-way impacts while still providing for all traffic movements between the two roads.

Martin Luther King, Jr. Avenue would be widened at the new interchange to include an opposing left-turn lane onto the ramps to Suitland Parkway. The Martin Luther King, Jr. Avenue bridge over Suitland Parkway would need to be replaced to carry the wider street as well as to accommodate the new ramps. The

intersection of Howard Road and Martin Luther King, Jr. Avenue would be widened to allow for more efficient traffic flow. The west leg of Howard Road would be widened at the intersection approximately five feet to the south, toward the existing church property.



Cross section of Martin Luther King, Jr. Avenue at the center-ramp interchange

The performance of the improved junction will vary somewhat given the selected option for the improvement to the Suitland Parkway and Firth Sterling Avenue intersection. A summary of the traffic operations is shown in Table 4-7.

Table 4-7
Suitland Parkway and Martin Luther King, Jr. Avenue Traffic Analysis Results

	LOS/Delay (seconds)
Interchange with Firth Sterling Avenue and Suitland Parkway Option 1, imp at-grade intersection	
AM	LOS B/19.1
PM	LOS D/36.0
Interchange with Firth Sterling Avenue and Suitland Parkway Option 2, gra separation	
AM	LOS C/31.0
PM	LOS F/96.8

Table 4-8 summarizes the impacts and the cost of the center ramp interchange.

Table 4-8
Center Ramp Interchange at Martin Luther King, Jr. Avenue

Suitland Parkway and Martin Luther King, Jr. Avenue	Impact										
	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic	Parkland Access	Pedestrian- and Bike-Friendly	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
Center-ramp interchange	+	o	+	+	+	o	+	+	–	o	$48.9

Legend: + improves – makes worse o no change

Rendering of new Martin Luther King, Jr. Avenue Bridge

ESTIMATED COST: $48.9 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland Parkway and Firth Sterling Avenue, I-295 and Suitland Parkway

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **16**
PROJECT NAME: Ramp to Parking Garage
PROJECT LOCATION: Howard Road and Metrorail Parking Garage
WARD: 8

PROJECT DESCRIPTION: Howard Road and the Anacostia Metrorail parking garage are located at Poplar Point. Howard Road runs between South Capitol Street to the west and Bowen Road to the east. The only connection to South Capitol Street, however, occurs at the northern end of the street where westbound vehicles can merge onto northbound South Capitol Street. Howard Road also provides access to Anacostia Park at this location, where northbound vehicles can turn right onto Anacostia Drive.

The awkward configuration of the parking garage, the exit ramp from I-295, and the connection to Anacostia Drive constrains access at this location. The confusing layout makes park access and development along Howard Road difficult.

Two options were identified and analyzed:
Option 1, Improvements to the existing ramp
Option 2, Replacement with a new ramp.

A ramp from southbound I-295 connects to Howard Road just south of the parking garage entrance. This ramp provides access to South Capitol Street via Howard Road and to the parking garage. The ramp mainly serves regional traffic.

The only access point to the parking garage is on Howard Road. This entrance road is poorly marked and very close to the ramp from southbound I-295. Those destined for the parking garage are of a regional, as opposed to local, nature and most use the ramp from I-295-to-entrance road route.

Comparison of options at Howard Road and Metrorail Parking Garage

Table 4-9 summarizes the impacts and comparative costs of the options.

Table 4-9. Comparison of Options at Howard Road and Metrorail Parking Garage

Howard Road and Metro Parking Garage	Impact										
	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic Separation	Parkland Access	Pedestrian- and Bike-Friendly Facilities	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
Option 1, improved ramp											
Modified ramp and entrance	+	o	o	o	+	o	o	o	o	o	$24.6
Realigned Howard Road an Anacostia Drive	+	o	o	+	o	+	+	+	–	–	
Option 2, new ramp											
New ramp	+	o	o	o	+	o	o	+	o	o	$27.7
Realigned Howard Road and Anacostia Drive	+	o	o	+	o	+	+	+	–	–	

Legend: + improves – makes worse o no change

ESTIMATED COST: $24.6 – 27.7 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland Parkway and I-295, Suitland Parkway and South Capitol Street

POTENTIAL PROJECT SUMMARY

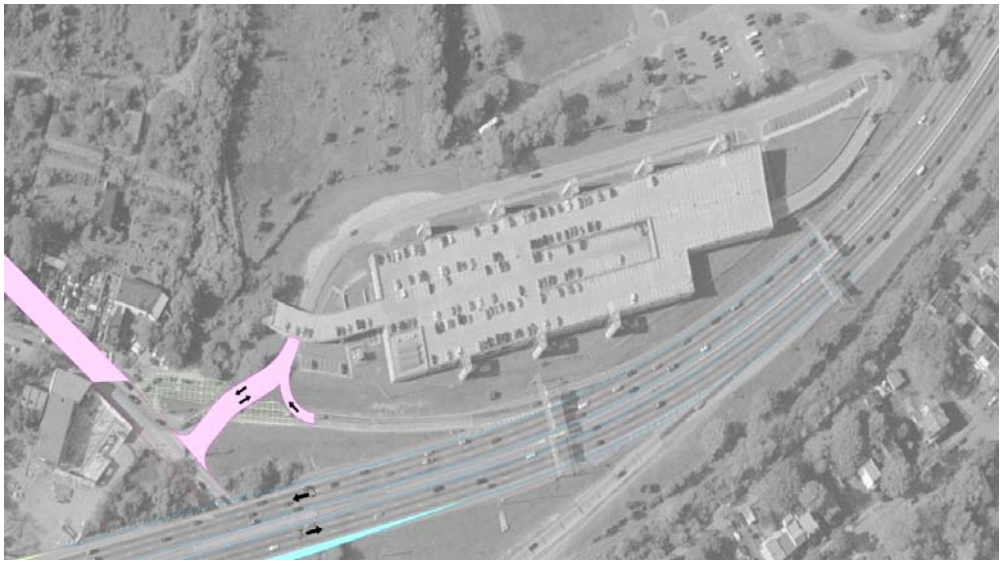
PROJECT NUMBER: **16-1**
PROJECT NAME: Option 1, Improved Ramp
PROJECT LOCATION: Howard Road and Metrorail Parking Garage
WARD: 8

PROJECT DESCRIPTION: This option would involve modifying the southbound I-295-to-Howard Road ramp, the alignment of Howard Road, and the alignment of Anacostia Drive. The ramp from southbound I-295 would remain but instead of connecting to Howard Road, it would curve to the right and connect directly to the parking garage access road. The road from the parking garage to Howard Road would be maintained as two-way but its alignment would be improved.

The alignment of Howard Road and Anacostia Drive would be modified to reflect the concept in the AWI Poplar Point Plan. This plan shows Howard Road extending straight from where it currently bends and ending in a cul-de-sac at the waterfront near the end of the existing Frederick Douglass Memorial Bridge, which would have been replaced. The AWI plan also shows Anacostia Drive curving southward toward Howard Road to create a strip of easily accessed parkland north of its new alignment.

In this option, Anacostia Drive would curve southwest and connect with Howard Road at an unsignalized intersection just east of the new South Capitol Street and Suitland Parkway intersection. The roadway would follow the curve of the Poplar Point shoreline and fit in with the context of the parkland. The existing alignment of Anacostia Drive would become a segment of the Anacostia Riverwalk Trail, a recreation trail currently being designed by DDOT.

Whereas southbound I-295 traffic can presently exit onto Howard Road to access the parking garage, this option would modify the ramp such that it would lead directly to the parking garage. Traffic exiting the garage would still be able to exit onto Howard Road at the modified intersection.



Option 1, improved ramp

This option would only be constructed if one of the Suitland Parkway and I-295 options, discussed in previous sections of this report, were constructed. Traffic destined for Howard Road or Anacostia Drive would exit onto a new ramp onto Suitland Parkway, and then turn right at a new intersection of South Capitol Street and Suitland Parkway.

Howard Road would be a pedestrian and bicycle route connecting the Riverwalk Trail and Anacostia Park with destinations such as the Anacostia Metrorail station, Metrobus service, and the new light rail station planned for the intersection of Howard Road and Firth Sterling Avenue.

The realignment of Howard Road and Anacostia Drive would provide improved parkland access and increased connectivity among local roads.

ESTIMATED COST: $24.6 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland Parkway and I-295, Suitland Parkway and South Capitol Street

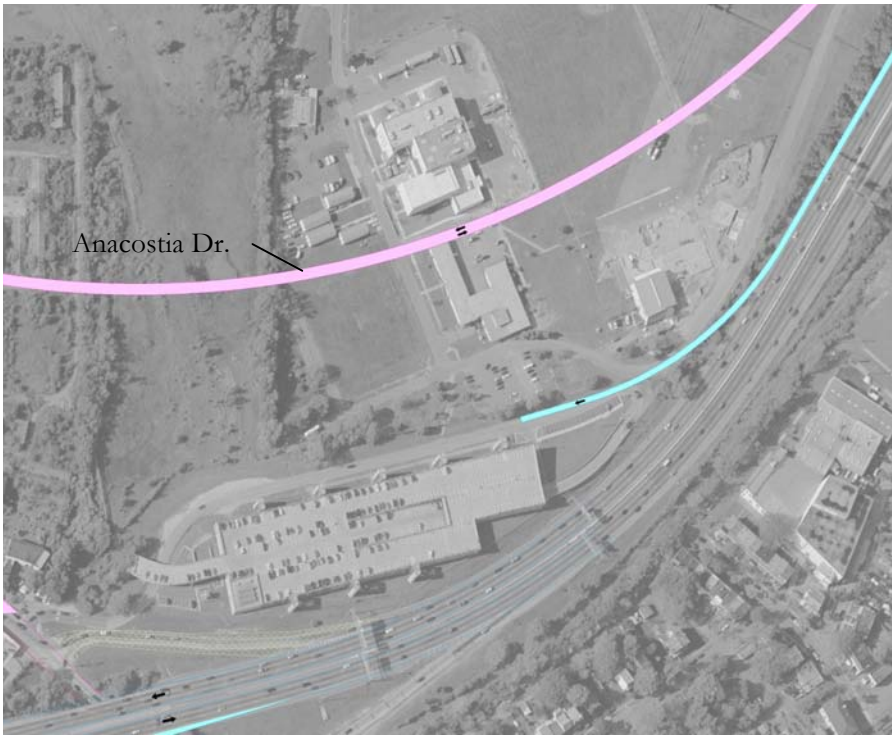
POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **16-2**
PROJECT NAME: Option 2, New Ramp
PROJECT LOCATION: Howard Road and Metrorail Parking Garage
WARD: 8

PROJECT DESCRIPTION: This option would provide for a new, replacement ramp from southbound I-295 into the parking garage. This ramp would connect to the eastern edge of the parking garage, providing a more direct regional entrance. The road from the parking garage to Howard Road would remain in place.

As in Option 1, the alignments of Howard Road and Anacostia Drive would be modified to reflect the concept in the AWI Poplar Point Plan.

Whereas southbound I-295 traffic can presently exit onto Howard Road to access the parking garage, traffic destined for the garage would instead take the new ramp. Entering and exiting traffic would still be able to access the garage from Howard Road.



Option 2, new ramp

This option would only be constructed if one of the Suitland Parkway and I-295 options, discussed in previous sections of this report, were constructed. Traffic destined for Howard Road or Anacostia Drive would exit onto a new ramp onto Suitland Parkway, and then turn right at a new intersection of South Capitol Street and Suitland Parkway.

Howard Road would be a pedestrian and bicycle route connecting the Riverwalk Trail and Anacostia Park with destinations such as the Anacostia Metrorail station, Metrobus service, and the new light rail station planned for the intersection of Howard Road and Firth Sterling Avenue.

As in Option 1, the realignment of Howard Road and Anacostia Drive would provide improved parkland access and increased connectivity among local roads.

ESTIMATED COST: $27.7 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: Suitland Parkway and I-295, Suitland Parkway and South Capitol Street

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **17**
PROJECT NAME:
PROJECT LOCATION: South Capitol Street and Potomac Avenue
WARD: 6

PROJECT DESCRIPTION: Potomac Avenue is part of the original L'Enfant Plan for the District. Though its 160-foot right-of-way is historic, to date the street and surrounding area have been largely undeveloped. There is at present no connection between the mainline of South Capitol Street and Potomac Avenue because South Capitol Street is on an elevated structure that extends the Frederick Douglass Memorial Bridge to the intersection of South Capitol Street and O Street.

Potomac Avenue is a two-way collector road with a right-of-way of 160 feet. The lane configuration is largely undefined, curbs are missing, and the unused railroad tracks have shifted and settled, making the pavement uneven. Sidewalks line the South Capitol Street service roads but do not connect to any other major pedestrian facilities.

The lack of an at-grade intersection at South Capitol Street and Potomac Avenue hinders commercial development or pedestrian activity at this location.

Three options were considered.
Option 1, At-Grade Intersection
Option 2, Traffic Circle
Option 3, Traffic Oval

Each of the three options would be enabled by a new, lower Anacostia River bridge that would reach grade just south of Potomac Avenue.

Based on the traffic simulation, Options 2 and 3 would operate better than the at-grade intersection option because fewer queues would form on the South Capitol Street mainline. Queues for Potomac Avenue would be similar in all options. The results are shown in Table 4-10. Table 4-11 summarizes the impacts and comparative costs associated with each option. The costs listed do not include demolition or construction costs for a new bridge over the Anacostia River.

Table 4-10 South Capitol Street and Potomac Avenue Traffic Analysis Results

	LOS/Delay (seconds)
Option 1, at-grade intersection	
AM	LOS E/59.7
PM	LOS F/176.1
Option 1a, at-grade intersection with Q Street one-way	
AM	LOS C/29.0
PM	LOS F/98.0
Option 2, traffic circle	
AM	LOS D/41.1
PM	LOS F/195.5
Option 3, traffic oval	
AM	LOS D/41.9
PM	LOS F/193.4

Table 4-11 Comparison of Options at South Capitol Street and Potomac Avenue

	Impact										
South Capitol Street and Potomac Avenue	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic	Parkland Access	Pedestrian- and Bike-Friendly	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
Option 1, at-grade intersection	+	N/A	N/A	+	–	+	+	+	+	–	$16.0
Option 2, traffic circle	+	N/A	N/A	+	–	+	+	+	–	–	$14.3
Option 3, traffic oval	+	N/A	N/A	+	–	+	+	+	–	–	$16.8

Legend: + improves – makes worse o no change

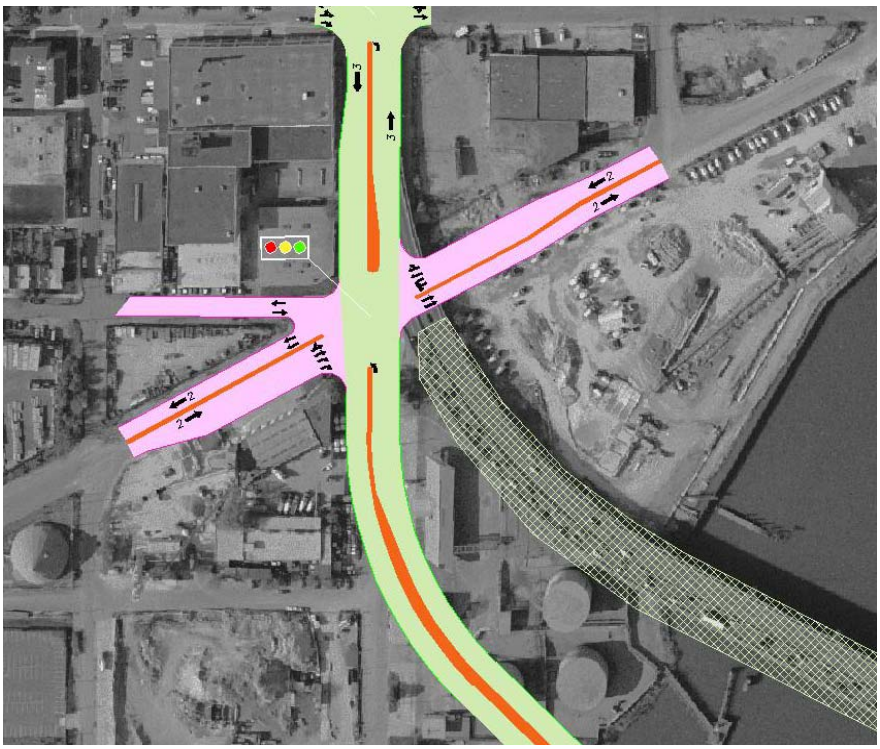
ESTIMATED COST: $14.3 Million - $16.8 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol Street and N, O and P Streets, Suitland Parkway and South Capitol Street, Frederick Douglass Memorial Bridge.

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **17-1**
PROJECT NAME: Option 1, At-Grade Intersection
PROJECT LOCATION: South Capitol Street and Potomac Avenue
WARD: 6

PROJECT DESCRIPTION: The intersection would be the junction of the widened six-lane South Capitol Street, four-lane Potomac Avenue, and one leg of the two-lane Q Street, SW. Exclusive left-turn lanes would be present at the northbound South Capitol Street approach and the westbound Potomac Avenue approach. The eastbound Potomac Avenue approach would include two exclusive right-turn lanes.

This option would allow for direct travel between a new South Capitol Street bridge and Potomac Avenue. All traffic movements would be possible with this option, with the exception of the Q Street, SW to Potomac Avenue movement due to the acute angle of the turn. Crosswalks and dedicated pedestrian phases would be provided at this intersection.



Option 1, at-grade intersection

The District of Columbia Bicycle Master Plan identifies existing bike lanes to remain on Potomac Avenue in their proposed facility map. These lanes would continue through the at-grade intersection. This segment of

South Capitol Street would include a bicycle route connecting to the multi-use trails across the new Frederick Douglass Memorial Bridge. This route would also continue through the intersection.

Intersection performance would be improved by making Q Street, SW one-way westbound. This would simplify the signal phasing and provide South Capitol Street through movements and Potomac Avenue turning movements with more green time. This change would result in a.m. operations improving to LOS C and p.m. operations, although remaining at LOS F, improving by a 56 second reduction in intersection delay.

This intersection would provide connectivity for pedestrians, bicyclists, and motorists while maintaining a small footprint and it would accommodate the transit alternatives being considered for the corridor.

ESTIMATED COST: $16 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol Street and N, O and P Streets, Suitland Parkway and South Capitol Street, Frederick Douglass Memorial Bridge.

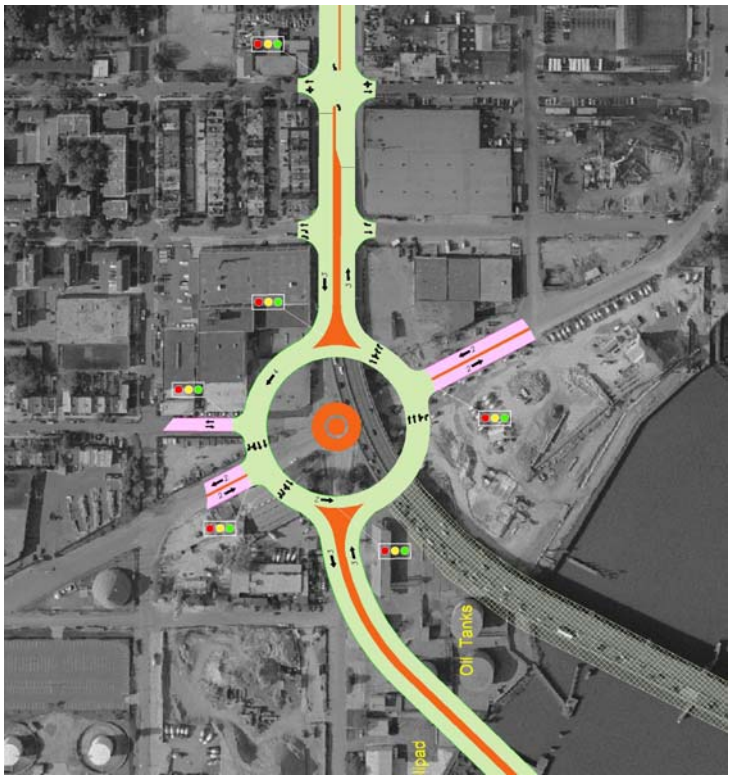
POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **17-2**
PROJECT NAME: Option 2, Traffic Circle
PROJECT LOCATION: South Capitol Street and Potomac Avenue
WARD: 6

PROJECT DESCRIPTION: The circle would be the junction of the widened six-lane South Capitol Street, four-lane Potomac Avenue, and one leg of the two-lane Q Street, SW. Because the intersection would be a traffic circle, left turn lanes would not be required. The circle would be as wide as four lanes around, having an outside diameter of 446 feet. This size is consistent with that of other traffic circles in Washington.

This option would allow for direct travel between a new South Capitol Street bridge and Potomac Avenue. All traffic movements would be possible with this option. Crosswalks and dedicated pedestrian phases would be provided at all legs of the circle. All traffic and pedestrian movements would also be possible at the intersections of O and N Streets.

Because bike lanes are considered potentially hazardous within a traffic circle, the lanes on Potomac Avenue would end prior to the circle and connect to multi-use trails that would run along the outside of the circle, carrying pedestrians and bicyclists.



Option 2, traffic circle

Traffic operations with the traffic circle would be more efficient than the at-grade intersection because left-turn lanes and signal phases would not be needed with the circle. Traffic would thus be able to flow more freely.

This option could accommodate a transit line of any of the types currently being studied in District of Columbia Transit Alternatives Analysis. If a light rail line were selected, the rail could travel below the elevated traffic circle to avoid traffic conflicts. In this scenario, the light rail line would be able to reach the grade of eastbound Potomac Avenue before turning onto Half Street, SE.

A traffic circle would allow for a monument, park, or other public space in the center. However, a traffic circle of this size would require pedestrians to travel further than they would through a traditional intersection, having to wait to cross several of the circle's legs.

ESTIMATED COST: $14.3 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol Street and N, O and P Streets, Suitland Parkway and South Capitol Street, Frederick Douglass Memorial Bridge.

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **17-3**
PROJECT NAME: Option 3, Traffic Oval
PROJECT LOCATION: South Capitol Street and Potomac Avenue
WARD: 6

PROJECT DESCRIPTION: The oval would be the junction of the six-lane South Capitol Street, four-lane Potomac Avenue, and one leg of the two-lane Q Street, SW. Because the intersection would operate like a circle, left turn lanes would not be required. The oval would be as wide as four lanes around having a width of 358 feet and a length of 736 feet. Unlike Options 1 and 2, this option would not include a horizontal curve at the south end of the oval.

As in Option 2, the potential cross section of South Capitol Street would include three lanes in each direction and an 18-foot-wide median in the center.

This option would allow for direct travel between a new South Capitol Street bridge and Potomac Avenue. All traffic movements would be possible with this option. Crosswalks and dedicated pedestrian phases would be provided at all legs of the oval.

Option 3, traffic oval

As in Option 2, the bike lanes on Potomac Avenue would end prior to the oval and connect to multi-use trails that would run along the outside of the oval, carrying pedestrians and bicyclists. As in Options 1 and 2, this option could accommodate a transit line of any of the types currently being studied in District of Columbia Transit Alternatives Analysis.

The traffic oval's primary advantage is that it would allow a straight street connection to the new bridge, without the curved street segment required in Options 1 and 2. This straight connection is in keeping with the strongly axial street configuration that is typical of the L'Enfant Plan. Similar to a traffic circle, a traffic oval would allow for a public space in the center, nearly double in size to the traffic circle, but it would reduce the land area on either side of South Capitol Street that could be redeveloped. A traffic oval of this size also would require pedestrians to travel further than they would through a traditional intersection, having to wait to cross several of the oval's legs.

ESTIMATED COST: $16.8 Million

RELATIVE PRIORITY: High

RELATED PROJECTS: South Capitol Street and N, O and P Streets, Suitland Parkway and South Capitol Street, Frederick Douglass Memorial Bridge.

Option 3, traffic oval, looking north

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **18**
PROJECT NAME:
PROJECT LOCATION: South Capitol Street and N, O, and P Streets
WARD: 6

PROJECT DESCRIPTION:

Present characteristics

South Capitol Street's intersections with N and O Streets are now blocked. Concrete barriers block N Street and allow only right turns on both sides of South Capitol Street. N Street is to be reopened as a near-term improvement, so this condition will be improved soon. The O Street intersection is blocked by the elevated structure leading to the Frederick Douglass Memorial Bridge. Neither intersection would have a traffic signal.

The intersection with P Street is now open, but like the intersection with Potomac Avenue it includes only the service roads on either side of South Capitol Street.

Potential Improvements

Physical configuration and design opportunities. These intersections would all be reopened and become part of the six-lane boulevard, recreating the urban street grid. Each intersection would have exclusive left-turn lanes on South Capitol Street in both directions, narrowing the median to 6 feet at these locations.

Functional performance and impacts. These reconfigured intersections would allow traffic, bicycle, and pedestrian functions to be restored. Traffic could cross South Capitol Street and all turns would be possible.

ESTIMATED COST: (Included in South Capitol Street and Potomac Avenue
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol and M Street, Potomac Avenue and K and L Streets

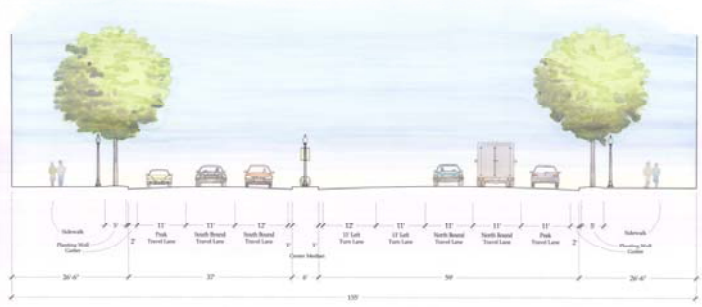
POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **19**
PROJECT NAME:
PROJECT LOCATION: South Capitol Street and M Street
WARD: 6

PROJECT DESCRIPTION: The four center lanes of South Capitol Street pass below M Street to create a grade-separated mainline roadway. The outer lanes of South Capitol Street, two in each direction, remain at grade to serve local traffic and act as ramps to form an urban diamond interchange with M Street. At the interchange, M Street is a six-lane roadway divided by a brick median on the western leg and undivided on the eastern leg. The interchange operates with a single traffic signal. At the interchange, on-street parking is permitted on the southern leg of southbound South Capitol Street.

This segment of South Capitol Street is clearly oriented towards automobile traffic and uses, and specifically caters to regional auto trips coming into the District from points south. The sidewalks are narrow, typically 10 feet wide, and there are few street trees and minimal landscaping. The corridor is lined with a mixture of light industrial and retail buildings, with large expanses of parking and other paved areas interspersed among the buildings. Additionally, cross streets have been blocked to reduce the number of intersections, limiting movement across South Capitol Street for pedestrian and bicycle traffic.

An at-grade intersection would restore the South Capitol and M Street interchange to a signalized, fully at-grade urban intersection with no underpass. South Capitol Street would carry three lanes in both the northbound and southbound directions. Dual left-turn lanes would be provided onto M Street to accommodate the large number of turning movements at this intersection. An approximately 21-foot-wide sidewalk would be provided on each side of South Capitol Street.



Cross section of South Capitol Street at M Street, Option 1, at-grade intersection

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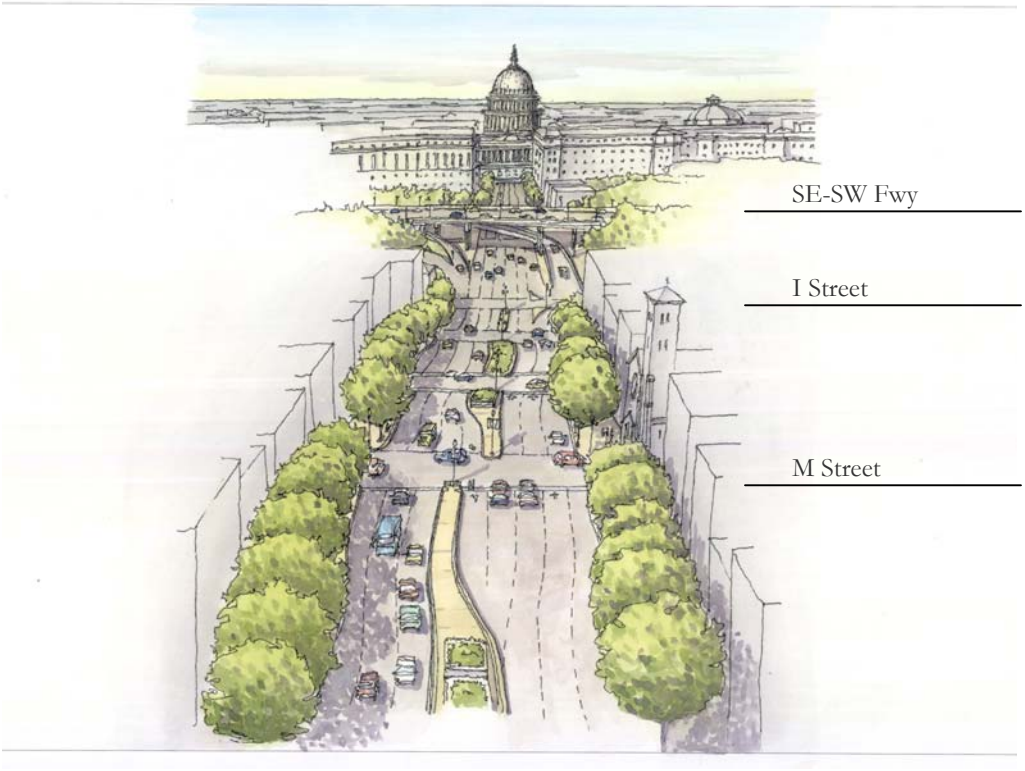
This improvement would include wide sidewalks for improved pedestrian travel. Handicapped-accessible pedestrian refuges would be constructed in the median of the South Capitol Street crossings to provide a manageable crossing distance and possible traffic calming. Bicyclists would travel either in the outermost South Capitol Street travel lanes, with motorists, or along the sidewalks. Though sidewalk travel is typically not recommended for cyclists, a portion of the sidewalk could be delineated to separate pedestrian and cyclist

spaces. The *District of Columbia Bicycle Master Plan* identifies this segment of South Capitol Street as part of the bicycle route network but does not recommend any new bicycle facilities.

Option 1, at-grade intersection

Table 4-12 Traffic Operations at South Capitol Street and M Street

	LOS/Delay (seconds)
OPTION 1, AT-GRADE INTERSECTION	
AM	LOS E/63.2
PM	LOS E/73.8



South Capitol Street looking north, with M Street Option 1, at-grade intersection, in the foreground

Table 4-13 summarizes the impacts of the at-grade intersection option.

Table 4-13. At-Grade Intersection at South Capitol Street and M Street

South Capitol Street an Street	Impact										
	Connectivity	Traffic Safety	Traffic Operations	Local Street Grid	Commuter and Local Traffic	Parkland Access	Pedestrian- and Bike-Friendly	Aesthetic	Impervious Surface	Relocation of Major Utilities or Facilities	Cost, millions
At-grade intersection	+	+	+	+	–	o	+	+	o	o	$23.3

Legend: + improves – makes worse o no change

ESTIMATED COST: $23.3 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol Street and K and L Streets, South Capitol Street and N, O and P Streets

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **20**
PROJECT NAME:
PROJECT LOCATION: South Capitol Street and K and L Streets
WARD: 6

PROJECT DESCRIPTION:

Present Characteristics
Like the intersections south of M Street, South Capitol Street's intersections with K and L Streets are now blocked. Concrete barriers block K Street and allow only right turns on both sides of South Capitol Street. The L Street intersection is blocked by the north end of the M Street underpass. Pedestrians are unable to cross South Capitol Street at either location.

Potential Improvements
Physical configuration and design opportunities. The intersection at K Street would be reopened and become part of the six-lane boulevard. The intersection at L Street could also be reopened if the M Street intersection is rebuilt as an at-grade intersection. Each intersection would have exclusive left-turn lanes on South Capitol Street in both directions. Neither intersection would have a traffic signal.

Functional performance and impacts. These reconfigured intersections would allow traffic, bicycle, and pedestrian functions to be restored. Traffic could cross South Capitol Street and all turns would be possible.

ESTIMATED COST: Included in South Capitol Street and M Street
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol Street and M Street, South Capitol Street and N, O, and P Streets, Potomac Avenue and South Capitol Street

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **21**
PROJECT NAME: South Capitol Street and I Street
PROJECT LOCATION:
WARD: 6

PROJECT DESCRIPTION:

Present Characteristics

South Capitol Street's intersection with I Street is now one of the few locations where traffic and pedestrians can cross the street. The intersection is complex because it is near the ends of the ramps to and from the Southeast-Southwest Freeway.

Near-term improvements at this location will improve some pedestrian and traffic characteristics.

Potential Improvements

Changes to the intersection could be relatively minor because of the proximity of the freeway ramps. Initial analyses found that the ramps could not be removed or significantly modified, which requires the intersection to remain in its present general configuration to provide for safe traffic movements. Potential modifications to the ramps should be considered further in preliminary engineering.

Functional performance and impacts. The I Street intersection would continue to function much as it does now, with the exception of the addition of the near-term improvements.

ESTIMATED COST: Included in Near-Term Improvements
RELATIVE PRIORITY: High
RELATED PROJECTS: South Capitol and M Street

POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **22**
PROJECT NAME: Washington Avenue
PROJECT LOCATION: Washington Avenue
WARD: 6

PROJECT DESCRIPTION: Washington Avenue assumes some of South Capitol Street's functions north of E Street, where South Capitol Street's character changes dramatically to a narrower residential street before entering the Capitol Complex, where it is closed to traffic. Angling to the northwest, Washington Avenue serves as the major traffic route between South Capitol Street and Independence Avenue.

Washington Avenue is two-way between Independence Avenue and D Street and is two separate one-way roads between D and E Streets. It has three lanes northbound and four lanes southbound with a landscaped median in the center and sidewalks along both sides. The bordering parcels to the east are under the jurisdiction of the Architect of the Capitol.

Intersection of South Capitol Street and Washington Avenue

I-395 descends under the National Mall to the west of Washington Avenue. Multiple parking lots that serve Capitol Hill employees border the roadway. Washington Avenue includes connections to ramps from northbound I-295 and I-395 and ramps to southbound I-295 and northbound I-395.

DDOT classifies Washington Avenue as a principal arterial. In 2001, the road carried an ADT volume of 28,400. Pedestrians primarily travel along the west side of the roadway and cross the road at several of the cross streets.

The existing physical configuration of Washington Avenue would be maintained, but recommended improvements include uniform streetscaping and wider sidewalks to facilitate pedestrian traffic along the road, consistent with the potential improvements on South Capitol Street. Traffic calming measures could help to create a more pedestrian-friendly environment, however. The Draft DDOT Bicycle Master Plan (April 2004) specifies a shared use path along Washington Avenue between Independence Avenue and C Street.

ESTIMATED COST: $5-8 million
RELATIVE PRIORITY: Medium
RELATED PROJECTS: Disabled Veterans' Life Memorial and related roadway modifications

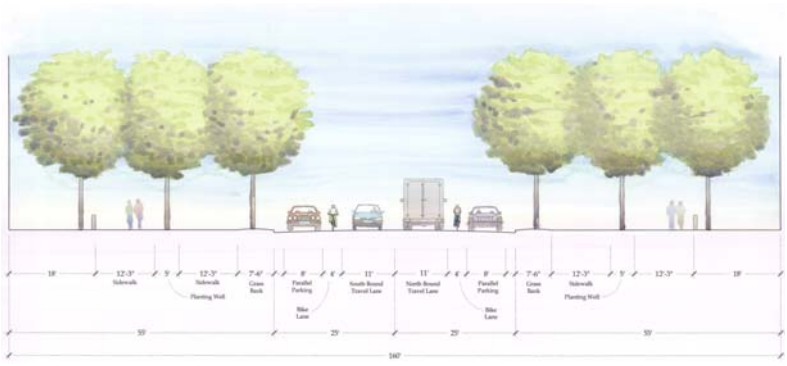
POTENTIAL PROJECT SUMMARY

PROJECT NUMBER: **23**
PROJECT NAME:
PROJECT LOCATION: New Jersey Avenue, SE
WARD: 6

PROJECT DESCRIPTION: New Jersey Avenue, SE runs between Independence Avenue and M Street, SE. The street is a 25 mph two-lane undivided collector with on-street parking on each side. It passes over Virginia Avenue, SE and the CSX freight railroad structure on a concrete bridge. The Southeast-Southwest Freeway passes over New Jersey Avenue immediately south of the freight railroad underpass. It terminates at a signalized intersection with the six-lane M Street, SE.

The visual character and physical development along New Jersey Avenue varies greatly. Well-maintained federal office buildings and historic Victorian row houses line the avenue north of I-295. The U.S. Capitol power plant begins a stretch of industrial use that extends southward to K Street, SE. South of K Street to M Street, it is fronted by retail and commercial uses. The elevated Southeast Freeway and industrial landscape that characterizes much of the road corridor create visual and psychological barriers that prevent a strong sense of connection between the Capitol and points south

In 2001, New Jersey Avenue carried an ADT volume as high as 3,000. All of New Jersey Avenue is designated an unofficial bicycle route on the city's Regional Bike Map, and the Draft DDOT Bicycle Master Plan (April 2004) specifies a shared use path along New Jersey Avenue between Independence Avenue and C Street. No transit service currently runs on New Jersey Avenue.



Potential typical section of New Jersey Avenue
New Jersey Avenue

If improved, a four-foot-wide bike lane and a parking lane would be provided on each side of the street. The wide right-of-way would allow three rows of trees to be planted on either side of the street. If a transit line were to be built on New Jersey Avenue, it could occupy the space on either side of the street section. One row of trees would be removed, but two could remain. These improvements would have little influence on the traffic functions of the street. The streetscaping would add uniformity to the street from the US Capitol to M Street and could act as a traffic-calming device. The addition of bike lanes along the street

would provide safer, more convenient facilities for bicyclists.

The estimated cost for the streetscape improvements along New Jersey Avenue from E Street to M Street would be $15,900,000.

ESTIMATED COST: $15.9 Million
RELATIVE PRIORITY: High
RELATED PROJECTS: None